Useful (for transmission between computers)

parts of ADAIR patent

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DOCUMENT-IDENTIFIER: US 5257366 A
TITLE: Query language execution on heterogeneous database servers using a bind-file bridge between application and database languages

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DEPR:
The invention is illustrated in its essential form in FIG. 1 of the drawings where reference numeral 10 indicates a first computer system which is approximately configured using conventional means to execute an application program, as well as the functions of this invention. The computing system 10 can be, for example, a mainframe machine of the 3090 type manufactured by and available from the IBM Corporation, The Assignee of this application. As is known, the 3090 computing system includes a CPU with a mainstore, input/output channel control means, direct access storage devices, and other I/O devices coupled thereto. Such a computing system may operate under the control of an operating system of the MVS type which executes application programs written in languages such as PL/1 or Cobol. The components of this invention which operate in this computing system can be written in, for example, the programming language called "C". A user interface to such a computing system would be any terminal provided with interactive time sharing under the TSO (time sharing option) available from the Assignee of this application. It is asserted that the environment established by the characteristics of the machine, language, and operating system of the first computing system 10 differs from the environment of the computing system 12. The computing system 12 can comprise, for example, a personal computer of the PS/2 type with an OS/2 EE operating system. Such a system can support a DBMS written in the "C" language which, in turn, supports a dialect of the well-known SQL language. A local agency for the purposes of this invention can be a program in the computing system 12 written in "C" language.

DEPR:
The Database Interface Functions 40 of the Application Access Agent are programs which effect execution of database commands at a remote DBMS using the database command invocation protocol. Database Interface Functions 40 are linked to the application program and called from the (modified) application program during the execution of the application program. The exact interface between Database Interface Functions and the application program may depend on the computing environment of the application program computer 10. Database Interface Functions obey a communication protocol agreed upon with the remote DBMS to effect the execution of bound database commands in packages at the remote DBMS. Database Interface Functions are responsible for communicating the values of Input Host Variables to the remote DBMS and for setting the values of Output Host Variables to the values returned from the remote DBMS as a result of executing a database command.

CLPR:
3. In a combination including an application program for execution on a first computer, a database management system for execution on a second computer which is separate and remote from the first computer, and a communications facility linking the first computer and second computer, wherein the first computer is provided with access means for interfacing the application program

with the database management system, the access means including:

CLPV:
preprocessor means for analyzing application programs which are written in a first computing language and which contain database commands in a second computing language; binding means for binding database commands in the second computing language to the application program at the second computer; and

CLPV:
database interface means for invoking execution of database commands at the second computer;

CLPV:
(a) using the preprocessor means at the first computer, removing database commands written in the second computing language from the application program and replacing said database commands in the application program with requests in the first computing language for execution of the database commands;

CLPV:
(b) using the bind means at the first computer, placing the database commands in a bind file and transmitting the database commands in the bind file from the first computer to the second computer;

CLPV:
(c) binding the database commands in the bind file to the application program in the database management system at the second computer;

CLPV:
(d) at the first computer, compiling the application program and linking the application program to the database interface means;

CLPV:
(e) executing the application program at the first computer and executing the database management system at the second computer;

CLPV:
(g) obtaining the database command from the bind file and executing the database command by the database management system at the second computer in response to the request from the application program.